

	settings	Description
HF spiking interval	1 Lots	The interval of HF Spiking for each lot(Spike)
HF spike timing	1(or2)	1 : before spiking ; 2 : after HF spiking
Number of HF spiking	4 Times	The stroke count of a measuring pump used for HF spiking

Fig.1a

	settings	Description
HF spiking interval	5 Lots	HF Spiking for every 5 lots
HF spiking timing	1(or2)	1 : before spiking ; 2 : after HF spiking
Number of HF spiking	3 Times	The stroke count of a measuring pump used for HF spiking

Fig.1b

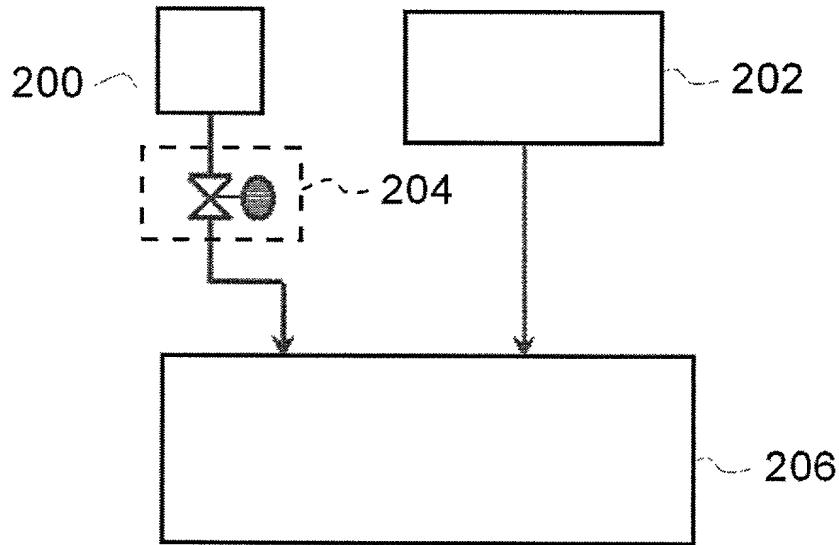


Fig.2a

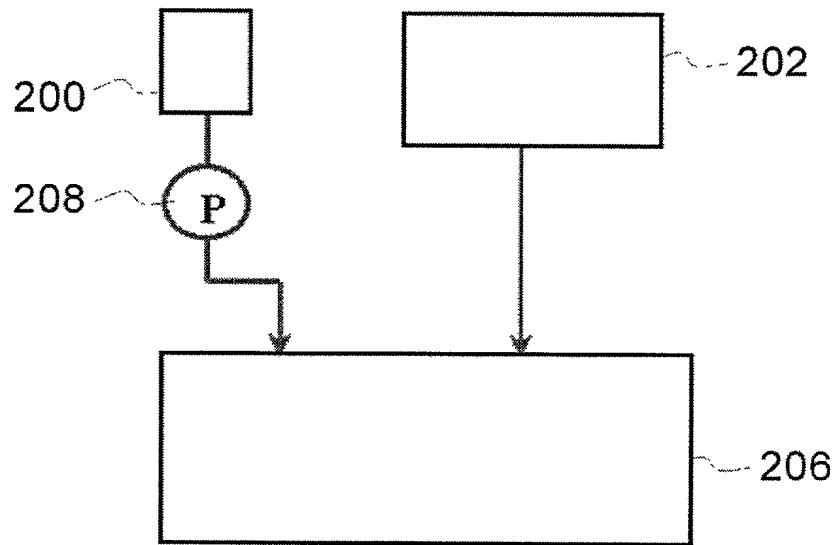


Fig.2b

	Settings	Description
HF spiking interval	60 Min	The interval of HF Spiking
Number of HF spiking	4 Times	The stroke count of a measuring pump used for HF spiking

Fig.3a

	Settings	Description
HF spiking interval	60 Min	The interval of HF Spiking
Number of HF spiking	3 Times	The stroke count of a measuring pump used for HF spiking

Fig.3b

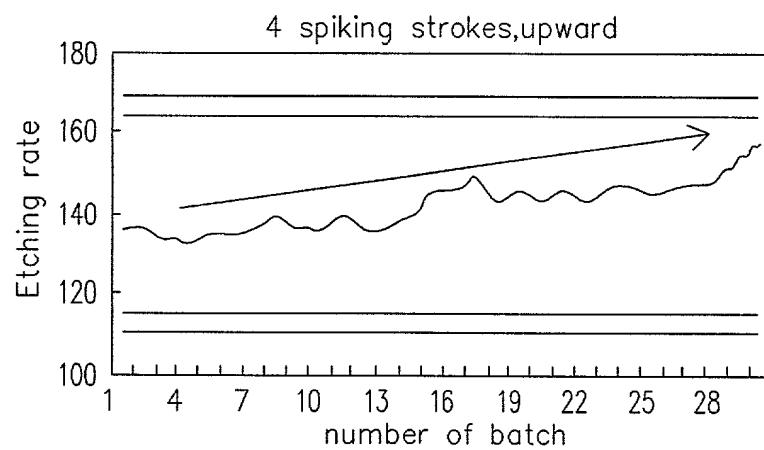


FIG. 4a

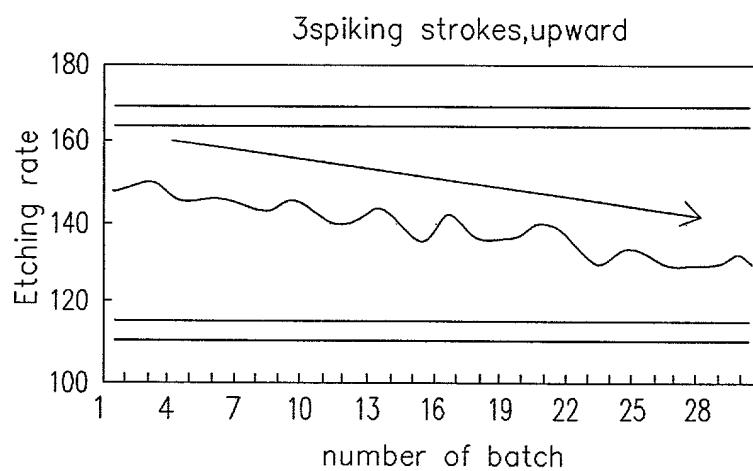


FIG. 4b

Result of etching before system running (280 sec.of etching time)		Target value : 140Å		Target value 440 Å	
Group	Etching amount of silicon nitride monitor wafer	Etching time(sec)	recipe	Etching time(sec)	recipe
Group 1	110-120Å	341	11	536	21
Group 2	120-130Å	314	12	493	22
Group 3	130-140Å	290	13	456	23
Group 4	140-150Å	270	14	425	24
Group 5	150-160Å	253	15	397	25
Group 6	160-170Å	238	16	373	26
Group 7	170-180Å	224	17	352	27

Fig.5a

Result of etching before system running (X sec.of etching time)		Target value : 140 Å		Target value : 440 Å	
Group	Etching rate of silicon nitride monitor wafer(Å/sec)	Etching time(sec)	recipe	Etching time(sec)	recipe
Group 1	0.393-0.429	341	11	536	21
Group 2	0.429-0.464	314	12	493	22
Group 3	0.464-0.500	290	13	456	23
Group 4	0.500-0.536	270	14	425	24
Group 5	0.536-0.571	253	15	397	25
Group 6	0.571-0.607	238	16	373	26
Group 7	0.607-0.643	224	17	352	27

Fig.5b

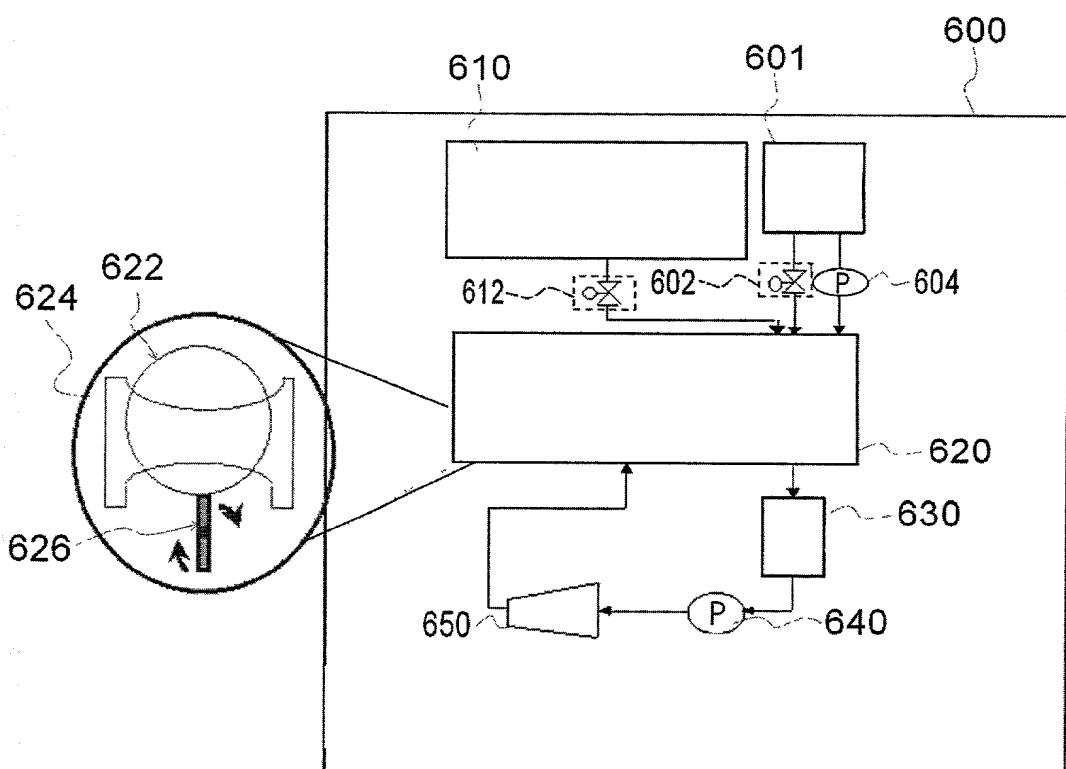


Fig.6

Based-on-charge mode				Based-on-time mode				Selection of control mode	
1, <input type="checkbox"/>	21, <input type="checkbox"/>	41, <input type="checkbox"/>		1, <input type="checkbox"/>	21, <input type="checkbox"/>	41, <input type="checkbox"/>	61, <input type="checkbox"/>	81, <input type="checkbox"/>	Even-charge mode
2, <input type="checkbox"/>	22, <input type="checkbox"/>	42, <input type="checkbox"/>		2, <input type="checkbox"/>	22, <input type="checkbox"/>	42, <input type="checkbox"/>	62, <input type="checkbox"/>	82, <input type="checkbox"/>	Based-on-charge mode
3, <input type="checkbox"/>	23, <input type="checkbox"/>	43, <input type="checkbox"/>		3, <input type="checkbox"/>	23, <input type="checkbox"/>	43, <input type="checkbox"/>	63, <input type="checkbox"/>	83, <input type="checkbox"/>	Based-on-time mode
4, <input type="checkbox"/>	24, <input type="checkbox"/>	44, <input type="checkbox"/>		4, <input type="checkbox"/>	24, <input type="checkbox"/>	44, <input type="checkbox"/>	64, <input type="checkbox"/>	84, <input type="checkbox"/>	Based-on-time-and-charge mode
5, <input type="checkbox"/>	25, <input type="checkbox"/>	45, <input type="checkbox"/>		5, <input type="checkbox"/>	25, <input type="checkbox"/>	45, <input type="checkbox"/>	65, <input type="checkbox"/>	85, <input type="checkbox"/>	
6, <input type="checkbox"/>	26, <input type="checkbox"/>	46, <input type="checkbox"/>		6, <input type="checkbox"/>	26, <input type="checkbox"/>	46, <input type="checkbox"/>	66, <input type="checkbox"/>	86, <input type="checkbox"/>	
7, <input type="checkbox"/>	27, <input type="checkbox"/>	47, <input type="checkbox"/>		7, <input type="checkbox"/>	27, <input type="checkbox"/>	47, <input type="checkbox"/>	67, <input type="checkbox"/>	87, <input type="checkbox"/>	
8, <input type="checkbox"/>	28, <input type="checkbox"/>	48, <input type="checkbox"/>		8, <input type="checkbox"/>	28, <input type="checkbox"/>	48, <input type="checkbox"/>	68, <input type="checkbox"/>	88, <input type="checkbox"/>	
9, <input type="checkbox"/>	29, <input type="checkbox"/>	49, <input type="checkbox"/>		9, <input type="checkbox"/>	29, <input type="checkbox"/>	49, <input type="checkbox"/>	69, <input type="checkbox"/>	89, <input type="checkbox"/>	
10, <input type="checkbox"/>	30, <input type="checkbox"/>			10, <input type="checkbox"/>	30, <input type="checkbox"/>	50, <input type="checkbox"/>	70, <input type="checkbox"/>	90, <input type="checkbox"/>	
11, <input type="checkbox"/>	31, <input type="checkbox"/>			11, <input type="checkbox"/>	31, <input type="checkbox"/>	51, <input type="checkbox"/>	71, <input type="checkbox"/>	91, <input type="checkbox"/>	
12, <input type="checkbox"/>	32, <input type="checkbox"/>			12, <input type="checkbox"/>	32, <input type="checkbox"/>	52, <input type="checkbox"/>	72, <input type="checkbox"/>	92, <input type="checkbox"/>	
13, <input type="checkbox"/>	33, <input type="checkbox"/>			13, <input type="checkbox"/>	33, <input type="checkbox"/>	53, <input type="checkbox"/>	73, <input type="checkbox"/>	93, <input type="checkbox"/>	
14, <input type="checkbox"/>	34, <input type="checkbox"/>			14, <input type="checkbox"/>	34, <input type="checkbox"/>	54, <input type="checkbox"/>	74, <input type="checkbox"/>	94, <input type="checkbox"/>	
15, <input type="checkbox"/>	35, <input type="checkbox"/>			15, <input type="checkbox"/>	35, <input type="checkbox"/>	55, <input type="checkbox"/>	75, <input type="checkbox"/>	95, <input type="checkbox"/>	
16, <input type="checkbox"/>	36, <input type="checkbox"/>			16, <input type="checkbox"/>	36, <input type="checkbox"/>	56, <input type="checkbox"/>	76, <input type="checkbox"/>	96, <input type="checkbox"/>	
17, <input type="checkbox"/>	37, <input type="checkbox"/>			17, <input type="checkbox"/>	37, <input type="checkbox"/>	57, <input type="checkbox"/>	77, <input type="checkbox"/>	97, <input type="checkbox"/>	
18, <input type="checkbox"/>	38, <input type="checkbox"/>			18, <input type="checkbox"/>	38, <input type="checkbox"/>	58, <input type="checkbox"/>	78, <input type="checkbox"/>	98, <input type="checkbox"/>	
19, <input type="checkbox"/>	39, <input type="checkbox"/>			19, <input type="checkbox"/>	39, <input type="checkbox"/>	59, <input type="checkbox"/>	79, <input type="checkbox"/>	99, <input type="checkbox"/>	
20, <input type="checkbox"/>	40, <input type="checkbox"/>			20, <input type="checkbox"/>	40, <input type="checkbox"/>	60, <input type="checkbox"/>	80, <input type="checkbox"/>		

Fig. 7

Based-on-charge mode			
1, [ ] 1	21, [ ] 1	41, [ ] 1	
2, [ ] 2	22, [ ] 2	42, [ ] 2	
3, [ ] 1	23, [ ] 1	43, [ ] 1	
4, [ ] 2	24, [ ] 2	44, [ ] 2	
5, [ ] 1	25, [ ] 1	45, [ ] 1	
6, [ ] 2	26, [ ] 2	46, [ ] 2	
7, [ ] 1	27, [ ] 1	47, [ ] 1	
8, [ ] 2	28, [ ] 2	48, [ ] 2	
9, [ ] 1	29, [ ] 1	49, [ ] 1	
10, [ ] 2	30, [ ] 2		
11, [ ] 1	31, [ ] 1		
12, [ ] 2	32, [ ] 2		
13, [ ] 1	33, [ ] 1		
14, [ ] 2	34, [ ] 2		
15, [ ] 1	35, [ ] 1		
16, [ ] 2	36, [ ] 2		
17, [ ] 1	37, [ ] 1		
18, [ ] 2	38, [ ] 2		
19, [ ] 1	39, [ ] 1		
20, [ ] 2	40, [ ] 2		

Fig.8a

Based-on-charge mode			
1, [ ] 0	21, [ ] 0	41, [ ] 0	
2, [ ] 0	22, [ ] 0	42, [ ] 0	
3, [ ] 0	23, [ ] 0	43, [ ] 0	
4, [ ] 0	24, [ ] 0	44, [ ] 0	
5, [ ] 1	25, [ ] 1	45, [ ] 1	
6, [ ] 0	26, [ ] 0	46, [ ] 0	
7, [ ] 0	27, [ ] 0	47, [ ] 0	
8, [ ] 0	28, [ ] 0	48, [ ] 0	
9, [ ] 0	29, [ ] 0	49, [ ] 0	
10, [ ] 1	30, [ ] 1		
11, [ ] 0	31, [ ] 0		
12, [ ] 0	32, [ ] 0		
13, [ ] 0	33, [ ] 0		
14, [ ] 0	34, [ ] 0		
15, [ ] 1	35, [ ] 1		
16, [ ] 0	36, [ ] 0		
17, [ ] 0	37, [ ] 0		
18, [ ] 0	38, [ ] 0		
19, [ ] 0	39, [ ] 0		
20, [ ] 1	40, [ ] 1		

Fig.8b

Based-on-time mode								
1, [3]	30	21, [3]	41, [3]	61, [4]	81, [4]			
2, [5]		22, [4]	42, [3]	62, [4]	82, [4]			
3, [3]		23, [3]	43, [3]	63, [3]	83, [3]			
4, [4]		24, [4]	44, [4]	64, [4]	84, [4]			
5, [4]		25, [4]	45, [3]	65, [4]	85, [4]			
6, [4]		26, [4]	46, [4]	66, [4]	86, [4]			
7, [3]		27, [3]	47, [3]	67, [3]	87, [3]			
8, [4]		28, [4]	48, [4]	68, [4]	88, [4]			
9, [4]		29, [4]	49, [3]	69, [4]	89, [4]			
10, [4]		30, [3]	50, [4]	70, [4]	90, [4]			
11, [3]		31, [3]	51, [3]	71, [3]	91, [3]			
12, [4]		32, [3]	52, [4]	72, [4]	92, [4]			
13, [4]		33, [3]	53, [3]	73, [4]	93, [4]			
14, [4]		34, [3]	54, [4]	74, [4]	94, [4]			
15, [3]		35, [3]	55, [3]	75, [3]	95, [3]			
16, [4]		36, [3]	56, [4]	76, [4]	96, [4]			
17, [4]		37, [3]	57, [4]	77, [4]	97, [4]			
18, [4]		38, [3]	58, [4]	78, [4]	98, [4]			
19, [4]		39, [3]	59, [3]	79, [3]	99, [3]			
20, [4]		40, [4]	60, [4]	80, [4]				

Fig.9a

Based-on-time mode							
1,	0	21,	0	41,	0	61,	0
2,	0	22,	0	42,	0	62,	0
3,	0	23,	0	43,	0	63,	0
4,	0	24,	0	44,	0	64,	0
5,	1	25,	1	45,	1	65,	1
6,	0	26,	0	46,	0	66,	0
7,	0	27,	0	47,	0	67,	0
8,	0	28,	0	48,	0	68,	0
9,	0	29,	0	49,	0	69,	0
10,	1	30,	1	50,	1	70,	1
11,	0	31,	0	51,	0	71,	0
12,	0	32,	0	52,	0	72,	0
13,	0	33,	0	53,	0	73,	0
14,	0	34,	0	54,	0	74,	0
15,	1	35,	1	55,	1	75,	1
16,	0	36,	0	56,	0	76,	0
17,	0	37,	0	57,	0	77,	0
18,	0	38,	0	58,	0	78,	0
19,	0	39,	0	59,	0	79,	0
20,	1	40,	1	60,	1	80,	1

Fig.9b

Based-on-charge mode				Based-on-time mode							
1, 0	21, 0	41, 0		1, 30	21, 3	41, 3	61, 4	81, 4			
2, 0	22, 0	42, 0		2, 5	22, 4	42, 3	62, 4	82, 4			
3, 0	23, 0	43, 0		3, 3	23, 3	43, 3	63, 3	83, 3			
4, 0	24, 0	44, 0		4, 4	24, 4	44, 4	64, 4	84, 4			
5, 1	25, 1	45, 1		5, 4	25, 4	45, 3	65, 4	85, 4			
6, 0	26, 0	46, 0		6, 4	26, 4	46, 4	66, 4	86, 4			
7, 0	27, 0	47, 0		7, 3	27, 3	47, 3	67, 3	87, 3			
8, 0	28, 0	48, 0		8, 4	28, 4	48, 4	68, 4	88, 4			
9, 0	29, 0	49, 0		9, 4	29, 4	49, 3	69, 4	89, 4			
10, 1	30, 1			10, 4	30, 3	50, 4	70, 4	90, 4			
11, 0	31, 0			11, 3	31, 3	51, 3	71, 3	91, 3			
12, 0	32, 0			12, 4	32, 3	52, 4	72, 4	92, 4			
13, 0	33, 0			13, 4	33, 3	53, 3	73, 4	93, 4			
14, 0	34, 0			14, 4	34, 3	54, 4	74, 4	94, 4			
15, 1	35, 1			15, 3	35, 3	55, 3	75, 3	95, 3			
16, 0	36, 0			16, 4	36, 3	56, 4	76, 4	96, 4			
17, 0	37, 0			17, 4	37, 3	57, 4	77, 4	97, 4			
18, 0	38, 0			18, 4	38, 3	58, 4	78, 4	98, 4			
19, 0	39, 0			19, 4	39, 3	59, 3	79, 3	99, 3			
20, 1	40, 1			20, 4	40, 4	60, 4	80, 4				

Fig.10

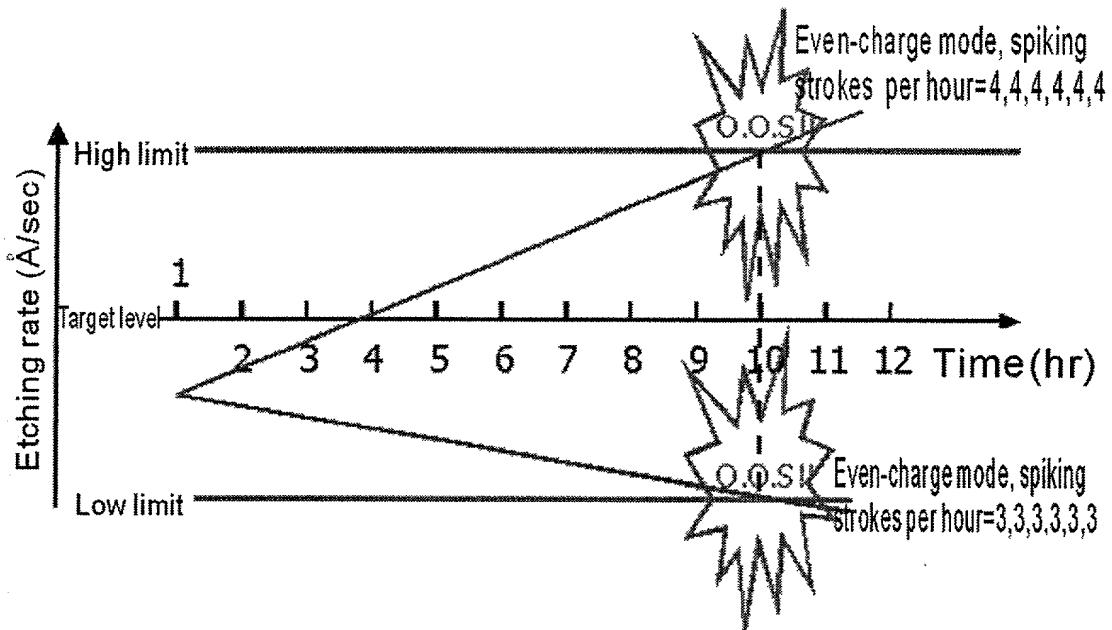


Fig.11

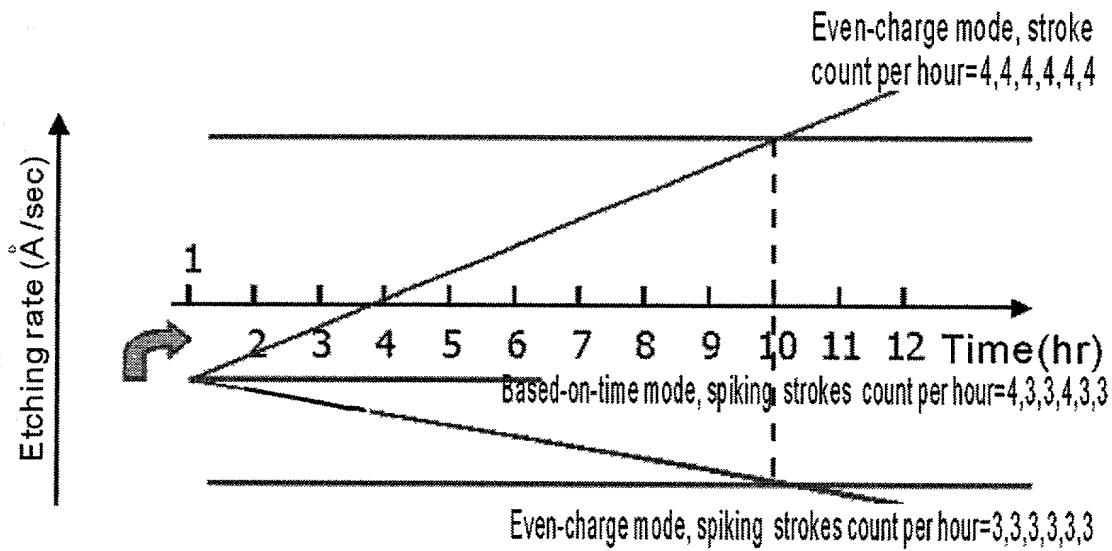


Fig.12

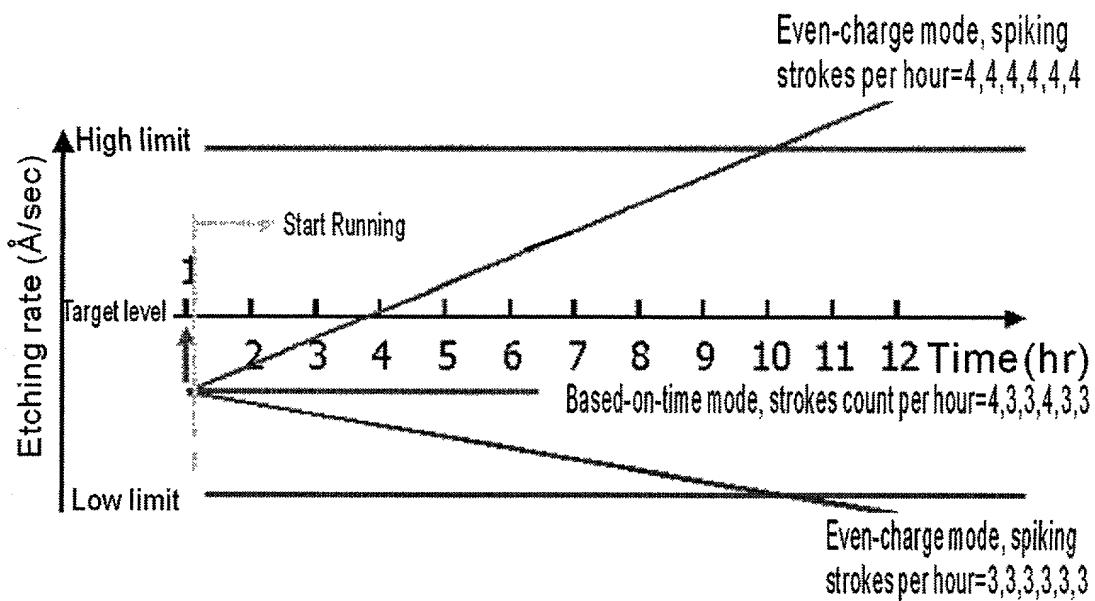


Fig.13

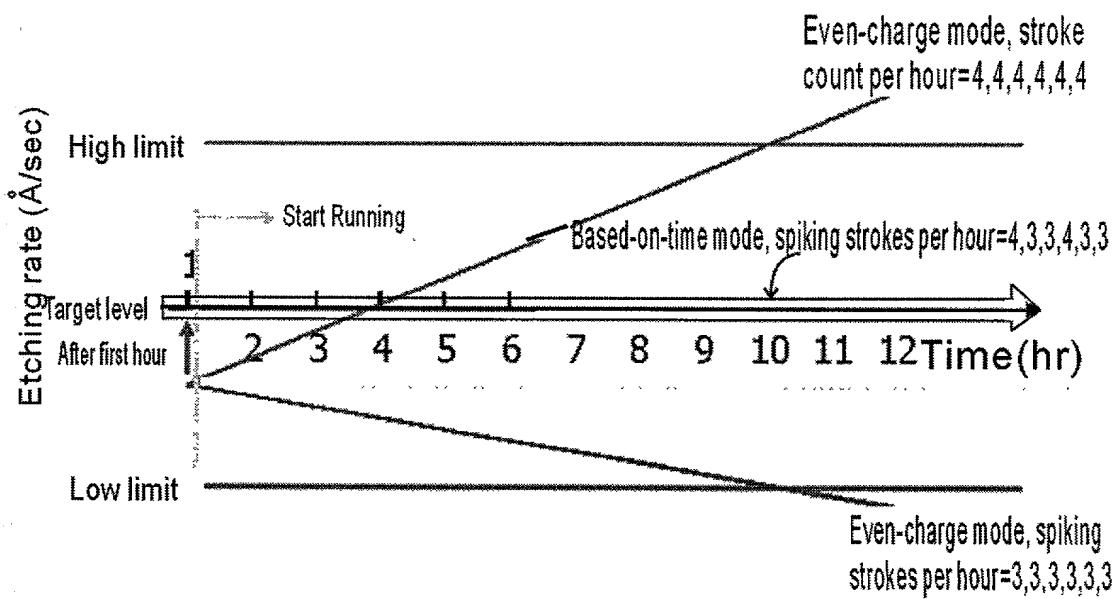


Fig.14